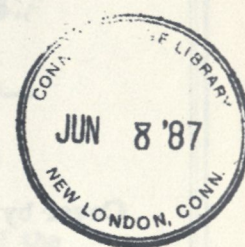


Citizens' Bulletin

Volume 14 Number 9 May 1987 \$5/yr.

The Connecticut Department of Environmental Protection



Hitting the Hiking Trail

Citizens' Bulletin

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Cover by Michael D. Klein

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Editor's Note

The *Citizens' Bulletin* doesn't do a lot of hard-sell advertising. That is for philosophical as well as budgetary reasons. We are growing, however, and fast closing in on the magic number of 10,000. One of our most steady sources of new readers is through gift subscriptions. Many readers send these gifts, often at Christmastime, but any other time of the year, too. We send out gift cards with the new subscriptions, with the name of the giver and, if requested, a line or so. This month someone in New Haven ordered a gift subscription and asked for the following line on the card: "Because I know you will help spread awareness."

Well, you know, that's quite wonderful, because that's precisely the point of this whole operation. That's the message we want to get out. "Because I know you will help spread awareness." A card like that is cause for celebration and pride. Let there be no doubt that the state of Connecticut, as its citizens demonstrate again and again, is a class act.

This February, Commissioner Stanley J. Pac retired. He left quietly, without fanfare or ceremony, because that's his style. But, because of that, a lot of people didn't get a chance to tell him how much they respected him as a man of honor and deep humility, a man who understood and acted upon his responsibility to others, a man who helped make this world cleaner, safer, and more beautiful. People wanted to tell him that but, as things usually go, they didn't get a chance.

So, thanks, Commissioner. It was nice to work for you.
Hope you enjoy this issue of the *Bulletin*.

R.P.



The Commissioner Retires

by
William Delaney
Director
Information and Education Unit

AFTER SETTING A RECORD OF 10 YEARS SERVICE AS COMMISSIONER of the Department of Environmental Protection that will be difficult for any successor to match, Stanley J. Pac retired at the end of February. His tenure as commissioner saw considerable growth in the Department, significant shifts in emphasis, and dramatic expansion of the DEP's areas of responsibility.

Pac's public service included stints in the Connecticut House of Representatives and Senate, four years as mayor of the City of New Britain, and two years as commissioner of the Motor Vehicle Department. The total of 20 years is remarkable, particularly following a successful career in private business.

When Stanley Pac was appointed DEP commissioner by the late Governor Ella T. Grasso, there was no hazardous materials management program in the Department, and pesticide control was being handled as a sub-section within the water compliance unit. Groundwater contamination was not widely perceived as a major problem in 1977.

During the past 10 years, hazardous waste has become a major area of concern in Connecticut and incidents of groundwater contamination have become fairly commonplace. The state's solid waste disposal problem, which was difficult 10 years ago, has passed through a variety of near-crisis phases. Many elements in the plan to deal with the problem have met with strong resistance at the community or neighborhood level. Concern over air emissions from waste-to-energy facilities, proposed as part of the solution to this problem, has introduced a whole new element in the administration of the state's clean air program.

Although this review may create the impression of steadily worsening conditions, the problems often represent the effects of actions, or failure to act, which occurred many years ago. They also represent increasing awareness and improved ability to measure the various elements that contribute to pollution and to measure the presence of contaminants in soil, air, or water.

Throughout this period of rapid and dramatic change, Stanley Pac demonstrated a remarkable capacity to adapt to shifting demands and increasing pressures. He had the ability to maintain the difficult balance between economic and environmental pressures. He recognized the complex needs of administering an agency charged with public service, enforcement, and advocacy, simultaneously.

The Department of Environmental Protection and, indeed, the State of Connecticut owe Stanley Pac a great debt of gratitude for his long service, his sincere dedication, and his thoughtful concern for the environment.

The Appalachian Trail

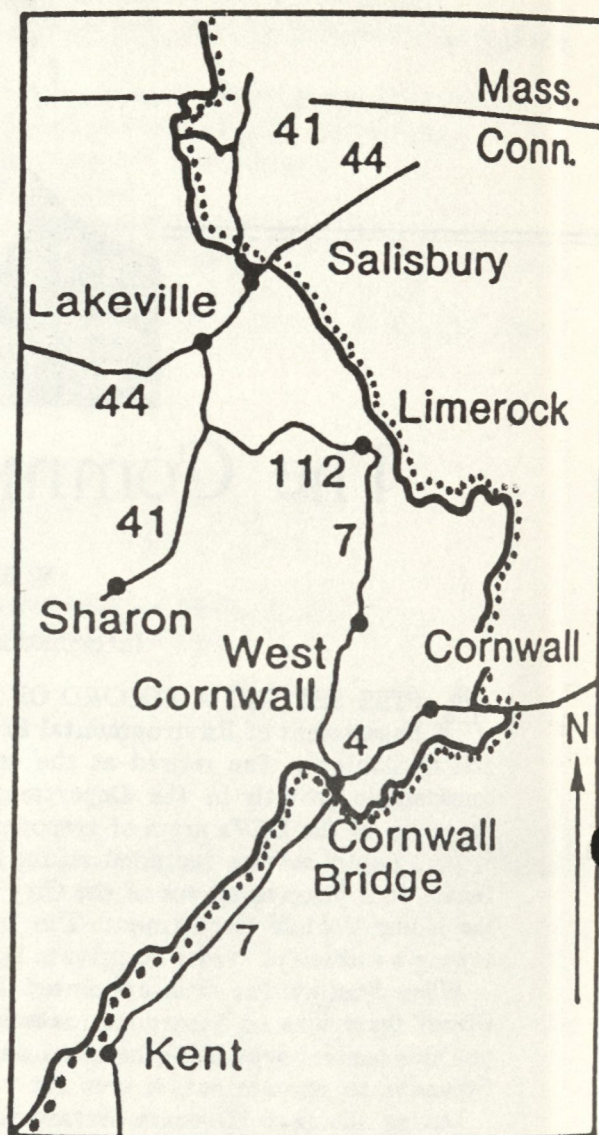
Connecticut's Wilderness Footpath

by
Mitchell Underwood
Chairman, Outreach Subcommittee
Appalachian Mountain Club
Connecticut Chapter

THE APPALACHIAN TRAIL is a 2,139 mile footpath, running from Springer Mountain, Georgia, to Mount Katahdin in Maine. It generally follows the crest of the Appalachian Mountain Range. It is from this range that the trail takes its name. The trail traverses 14 states at elevations from nearly sea level to over 6,600 feet.

Although Connecticut boasts only 61 miles of the trail, it was a Connecticut citizen who is credited with bringing the concept of the "endless trail" to reality.

The "supertrail" concept was first introduced in 1921 by Benton Mackaye of Shirley Center, Massachusetts. Alas, the concept was slow to catch on and enthusiasm for the idea all but died out before much



work had been done. Then, in 1926, Arthur Perkins of Hartford took on the job of persuading various groups to locate and cut the "path in the wilderness." Above all else, it is due to Arthur Perkins' enthusiasm and the momentum that he was able to generate that we can credit the completion of the trail. Meanwhile, in Connecticut, Ned Anderson of Sherman, Chairman of the Housatonic section of the Connecticut Park and Forest Association, took on the responsibility of cutting and blazing most of what is now the Appalachian Trail in Connecticut. Ned Anderson's Boy Scout troop maintained the trail for more than 20 years until 1949 when that responsibility was assumed by the Connecticut Chapter of the Appalachian Mountain Club. With the National Trails System

Act of 1968 and subsequent revisions, the Appalachian Trail was designated as a National Scenic Trail. As a result of these acts, guidelines were established for the protection of the trail and money for the acquisition of an adequate trail corridor was appropriated. Since 1968 the National Park Service has turned over the management of the entire East Coast corridor to volunteer groups. This represents the only time that volunteer groups have ever been assigned responsibility for federal lands.

THE CONNECTICUT SECTION OF THE TRAIL enters the state from the south in Sherman and continues to the Massachusetts state line at Salisbury (just south of Sages Ravine). The trail winds through the scenic hills and valleys near the Housatonic River. The Connecticut section of the trail has 14 designated campsites. These are the only locations where camping is allowed. Five of these sites are provided with lean-tos. Access is provided to the trail by means of trailheads which are usually located in areas where the trail comes close to a road. These trailheads are marked on maps of the trail. It is of particular importance when planning a hike to check a current map. Changes in the course of the trail are not uncommon. A major rerouting of the Cornwall Bridge to Falls Village section of the trail is planned for this year. There are several sources for these maps and information: The Appalachian Mountain Club, P.O. Box 114, Salisbury, CT 06068; The Appalachian Trail Conference, P.O. Box 807, Harpers Ferry, WV 25425-0807; The Connecticut Forest and Park Association, Meriden Road, Middletown, CT 06457.

ONCE ON THE TRAIL, THE WAY IS MARKED by white painted blazes. A blaze is a two-inch by six-inch mark on trees, poles, and rocks. These blazes mark the trail in both directions. Often when a trail makes a turn, two blazes will be found one above the other. In Connecticut, the upper blaze is offset in the direction of the turn.

Whether you seek lavish flower-covered meadows, hardwood forests all decked out in dazzling autumn brilliance, or the unchanging peacefulness of an evergreen grove, you will find them all along Connecticut's stretch of the Appalachian Trail. From Sherman to Salisbury, the trail conjures up ghostly images of a time long past, a time when the valley was known as "Iron Country" and even "The Arsenal of the Revolution." Remains of ancient charcoal pits can still be seen along the trail. In Falls Village, the trail passes the ruins of a massive canal built to serve the industrial needs of the area. In Kent, the trail passes near the still active Schaghticoke Indian Reservation and in Salisbury, it climbs to the peak of

Bear Mountain, the highest summit in Connecticut (although not the highest point in Connecticut). Although some sections of the trail provide less strenuous exercise for the casual walker, other sections involve steep and rugged terrain that leaves even the experienced hiker breathless. Almost poetically, the hardy souls who struggle to the summits are rewarded with truly magnificent views of the valley below.

MAINTENANCE of the Connecticut section of the trail is the responsibility of the Connecticut Chapter of the Appalachian Mountain Club. Maintenance responsibilities of the chapter include not only the actual trail but all side trails, campsites, and trailheads. The chapter, through its trail monitors, also has responsibility for the protection of the trail corridor. Virtually all of the work is carried out by volunteers. The impact of the tens of thousands of individuals who use the trail annually



Group of hikers enjoy the beauty of an evergreen grove on the Stanley property in Kent. (Photos: Peter Jensen)

makes the job of these volunteers never-ending. Another A.M.C. group, the Appalachian Trail Guides, is also involved in the preservation of the trail. These individuals roam the trail, offering assistance to hikers and reminding hikers of their responsibility to abide by trail usage guidelines.

These guidelines are few but very important:

1. Because of the constant danger of fire, hikers are asked to use backpacking stoves. Open fires are not allowed on the Appalachian Trail in Connecticut.
2. In other states, hikers are advised to camp at least 200 feet from water. This dispersed camping pattern serves to reduce the impact of camping on the trail. In Connecticut, because of the narrowness of the trail corridor, hikers are asked to camp only in designated camping areas.
3. Although outhouses are provided at various locations along the trail, in an emergency, one should move at least 50 feet from the trail and 200 feet from any water source.
4. Large groups tend to spread out while hiking and often do not remain on the established trail. Many areas along the trail are ecologically fragile. Endangered and protected species of plants and animals are found along stretches of the trail. A careless hiker can, in a thoughtless moment, speed one of these spe-

cies along the road to extinction or damage a fragile ecosystem that may have taken hundreds of years to develop. More immediately however, hikers who fail to stay on the established path cause damage that results in erosion of the land. One solution is, of course, to stay on the existing trail. If your group is larger than 10, you might consider breaking into two or more groups. Why not give that future hike leader a chance to lead one of these groups?

5. There are few things more disappointing than to come upon what you anticipated would be a magnificent view, only to have it ruined by the sight of a variety of empty containers and packaging materials. Be prepared to carry out what you have carried in. It doesn't take a whole lot of extra effort to carry that trash back home and dispose of it there.

6. That particularly attractive flower or rock will no longer be there for one and all to enjoy if you decide to take it with you. It can be very difficult to leave such beauty behind, but it is part of what makes the trail a special place.

7. The trail is a footpath that precludes use by vehicles or horses.

The Appalachian Trail represents a very special natural resource. With a little care by all of us, we can ensure that it will remain for our future enjoyment and for the enjoyment of our children and their children.



This is just one of many magnificent views along the trail. This one is from Rand's View between Falls Village and Salisbury. The ridge in the distance is the Mt. Riga Plateau.



The fisher uses tree cavities for the birth and rearing of young. (Photos: Leonard Lee Rue III)

The Alert and Secretive Fisher

THE FISHER (*Martes pennanti*) is one of the larger members of the weasel (Mustelid) family. Its name is actually inappropriate since — unlike its close relative, the otter — the fisher seldom eats fish. The name may have been derived from "fitch," or European polecat, an animal which the early settlers may have confused with the fisher. In French, the pelt of a polecat is



Paul Rego

called "fiche," "ficheux," or "fichet," names which are similar to "fisher." Other common names are pekan, fisher cat, and black cat.

The fisher's long, slender body, short legs, and long bushy tail are usually dark brown to nearly black. The tail, rump, and feet are darkest, in contrast with the head and shoulders, which are lighter in color and often grizzled in appearance, especially in males. Some individuals have a white chest patch.

Adult males weigh nearly twice as much, 8 to 13 pounds, as the 4- to 5 1/2-pound females. One exceptionally large male weighed a record 20 pounds. Adult males range in length from 36 to 40 inches, and females range from 30 to 36 inches.

The fisher has five toes on each foot, with semi-retractable claws which contribute to its ability to climb trees. Its 38 teeth exhibit a dentition characteristic of carnivores, with four canines, molars, and premolars adapted for shearing meat.

Historically, the fisher's range included Connecticut. Currently, the fisher may occur in areas of low population density in northeastern towns bordering Massachusetts; recent sighting reports from other areas of the state have not been substantiated. Neighboring New York and Massachusetts harbor popula-

tions of this furbearer, where it appears to be expanding its range. Overall, fisher range includes regions of the northern United States and Canada in areas of continuous coniferous and mixed hardwood-softwood forests. It avoids areas without overhead cover, such as fields, frozen lakes, and recently cut forests.

TYPICAL OF MOST MEMBERS of the weasel family, the fisher has a high metabolic rate. Although primarily nocturnal, it is active day and night throughout the year, and solitary except for a brief period during the breeding season, which occurs in March or April. All mustelids, including the fisher, undergo delayed implantation. This means the fertilized ovum develops only slightly and then remains dormant for nine to 10 months before attaching to the uterine wall and completing growth. About one week after the female gives birth to three to four kits, she breeds again. The kits are born with closed eyes and are helpless. The few accounts of natal dens indicate tree cavities are used for birth and the early rearing of young. The fisher may also use tree cavities outside of the rearing period, and will den or rest in the thick growth of conifer trees and in cavities under snow. Kits develop rapidly and are weaned in four months. Both males and females are sexually mature at one year of age, but because of delayed implantation, females will not bear offspring until age two.

The fisher hunts by zig-zagging through areas of thick, regenerating forest vegetation, but traverses areas with little ground cover in a relatively straight line, hardly changing direction. It does not stalk or chase prey, but relies on surprising its quarry in covert. Foods eaten by the fisher include mice, voles, hares, rabbits, carrion, fruits, nuts,

squirrels, porcupines, birds, and frogs. The fisher is one of the few predators which can efficiently prey on porcupines, suffering no apparent ill effects from the quills they receive through these encounters.

The fisher has not been studied as extensively as many other wildlife species. Home range estimates vary, ranging from three to 15 square miles, and averaging four to eight square miles in suitable habitat. Males range over larger areas than females do. Population densities also vary with habitat suitability, and probably average one fisher per three to five square miles in quality habitat.

HISTORICALLY, the fisher was present in Connecticut in greater numbers. It became scarce mainly due to forest logging and clearing by early settlers; by the late 1800s, the fisher was considered extirpated from the state. Reforestation and changes in land-use practices have restored the suitability of the fisher's habitat in part of its historic range, allowing a small population to begin recolonizing the northeast section of the state.

Alert, secretive, and rarely found in high concentrations, the fisher is a rewarding sight to the wildlife observer. In some states, such as Massachusetts and New York, a regulated trapping season exists. Fisher fur is valuable, especially the smoother, more silky pelts of the females.

Perhaps the fisher's most beneficial attribute is its ability to prey on porcupines. This trait has endeared it to foresters, since porcupines often destroy the leader shoots of both coniferous and deciduous trees. The fisher passes quills, feathers, and bones through its digestive system with no apparent difficulty. Most other animals which have tangled with a porcupine — including dogs — suffer con-

siderable agony and infection from quills. The fisher has been known to carry quills in its hide for long periods of time, apparently with no adverse effects.

THE FISHER has few natural enemies, although predators such as coyotes, bobcats, hawks, or owls may kill the young. Kits may also perish by chilling or fighting among themselves. Currently, the fisher is totally protected under Connecticut law.

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The Technical Assistance Informational Series is 75 percent funded by Federal Aid to Wildlife Restoration — the Pittman-Robertson (P-R) Program. The P-R Program provides funding through an excise

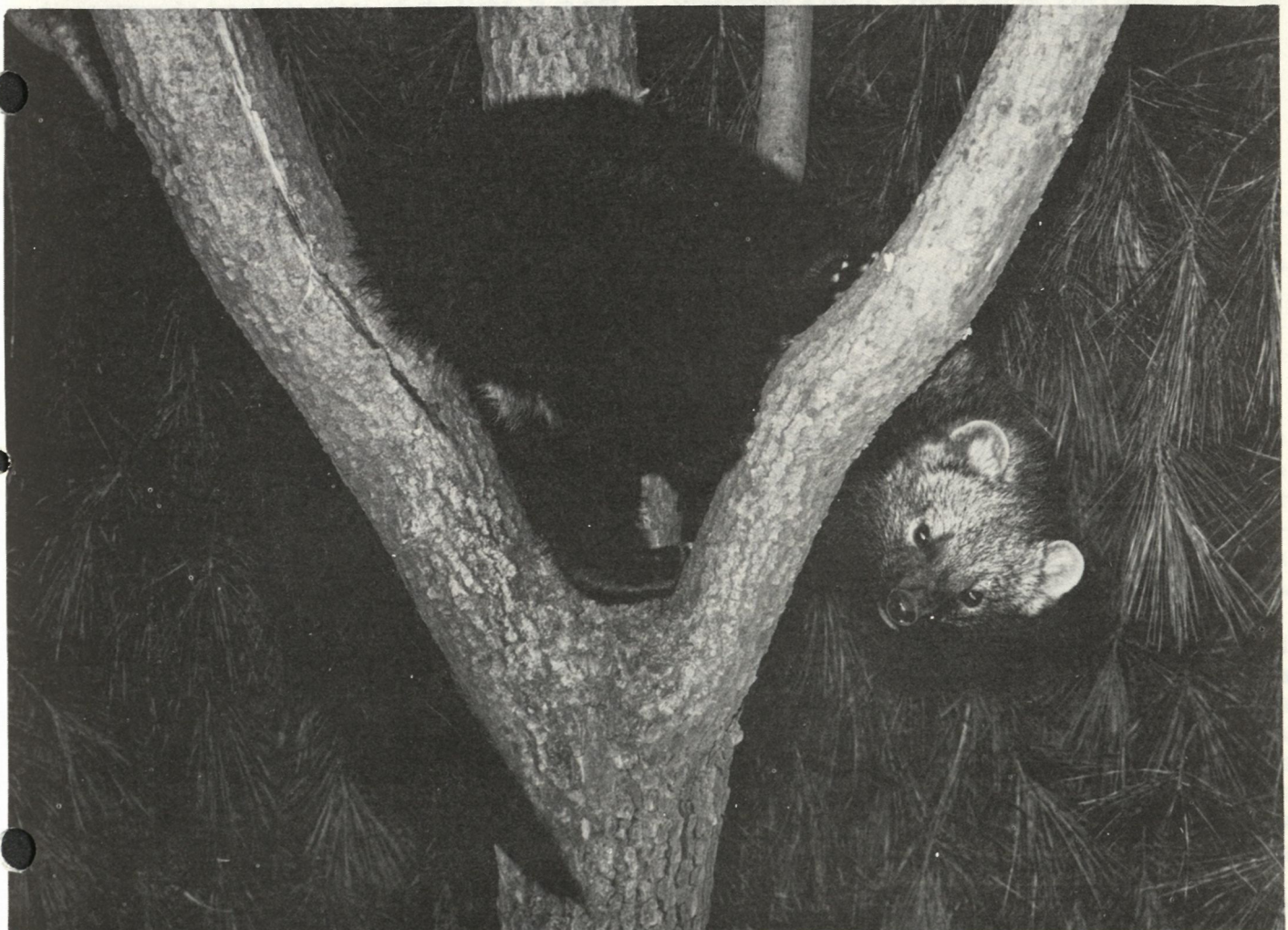
tax on the sale of sporting firearms, ammunition, and archery equipment. The remaining 25 percent of the funding is matched by the Connecticut Wildlife Bureau. ■

Correction Noted

An article in the January 1987 *Citizens' Bulletin* on osprey populations contained incomplete information. The article should be amended to read as follows:

"In the 1940s, there were 1,100 active nests from New York to Boston. In 1973, there were 115 active nests from New York to Boston. In 1974, there were nine active nests in Connecticut."

We regret this error.



The predatory fisher does not stalk or chase prey, but relies on the element of surprise.

DEP Releases Inventory of Hazardous Waste Sites

by
Leslie Lewis
Citizens' Participation
Coordinator

ON JANUARY 29, 1987, Governor William O'Neill announced the release of a DEP report on the search for and survey of 5700 potential hazardous waste sites in Connecticut. The inventory did not assess the impact that the sites may present to public health or the environment; its purpose was to identify sites where hazardous wastes have been disposed in order to prioritize them for implementation of appropriate clean-up measures.

The DEP determined that hazardous wastes had been disposed of on 567 sites. Of that number, additional evaluation has already been initiated at 275 sites and 49 sites have been cleaned up. The remaining 243 sites need further evaluation.

Preliminary reviews indicated that only a handful of the sites will qualify for inclusion in the federal Superfund program. The governor, therefore, has asked the General Assembly to approve a \$10 million bond allocation to create a state Superfund. In addition, he asked for funding for four new staff positions and a telephone hotline to help the program along.

Governor O'Neill also asked the General Assembly to adopt legislation to require the annual publication of a status report on these sites, the expenditure of the funds in the program, and the needs of the future.

The program will be structured so that the state will recoup clean-up costs from the entities responsible for the pollution. In other cases, there will be no culpable party and the state will have to absorb

the total costs.

This inventory makes Connecticut the first state in the nation to complete a comprehensive search for potential hazardous/toxic waste disposal sites in each of its cities and towns. It is very important to note that listed sites *do not necessarily* pose a hazard. Some of the sites are permitted hazardous waste storage and disposal facilities or municipal landfills. Other sites on the list may be insignificant because of the amounts or kinds of materials present.

For more information or a copy of the inventory, please contact Richard Pease, Hazardous Material Management Unit, 566-8844, or write to him at 165 Capitol Avenue, Hartford 06106.

DUE to overwhelming public response, the DEP and the Hazardous Waste Management Service are sponsoring a second conference for Small Quantity Generators of Hazardous Waste. The conference will be held from 8:30 to 3:30, May 21, at the Ramada Inn in Meriden. Registration, which includes lunch, is \$25. For more information contact Leslie Lewis at the Information and Education Unit, DEP, 165 Capitol Avenue, Hartford 06106, or phone 566-3489.

NANCY KRIZ, a frequent contributor to the *Citizens' Bulletin*, was presented with an Environmental Leadership Award by the New England Environmental Network at a conference held at Tufts University on March 21 and 22. Other recipients of this award for outstanding contribution to New England Environmental leadership included Senator Edward Kennedy of Massachusetts, Governor

Madaline Kunin of Vermont, and Maine State Representative Jim Mitchell.

Mrs. Kriz served on the Thompson Conservation and Inland Wetlands Commission from 1975 to 1986, chairing it for eight years. In 1984 she was elected president of the Connecticut Association of Conservation and Inland Wetlands Commissions. Under her leadership, CACIWC has greatly expanded its membership and influence. She has campaigned vigorously for wetland protection around the state and the region and has encouraged and participated in the development of educational opportunities for local wetlands commissioners.

On a different front, Mrs. Kriz chaired the Northeast Connecticut Household Hazardous Waste Task Force, which organized a successful collection day in November of 1985. She is also a member of the state Household Hazardous Waste Advisory Committee. Rounding out this busy schedule is a position on the Connecticut Council on Environmental Quality and membership on the Environment/2000 committee.

Mrs. Kriz has also been active as an author, contributing articles to the *Putnam Observer Patriot*, *Connecticut Audubon* magazine and many other publications, as well as the *Citizens' Bulletin*.



Nancy Kriz, recipient of Environmental Leadership Award.



Connecticut's Champs

by
Kim Nauer
Environmental Intern

SHIMMERING PATTERNS OF SUNLIGHT fall down down through the great old tree's 93 feet of rustling leaves. At the base of the tree, a few small saplings struggle for their share of sunlight. It is not likely that any of the saplings will attain the majesty of the great tree from which they sprang as seeds. The big tree is in Norwich. It is a sugar maple, and it is the largest sugar maple in the United States.

Under the tree, balanced comfortably on a gnarled root, is William Linke. Linke perceives his search for the oldest, largest, and noblest trees as a kind of quest. He feels that in a world of lifeless skyscrapers, such trees are priceless, irreplaceable treasures.

As a member of the Botanical Society's Notable Trees Committee, Linke is involved in compiling a list — which may ultimately become a book — of large and historically significant trees in the state. It is an effort to bring the records of Connecticut's great trees up to date, something that hasn't been attempted since the 1960s. It is also a means of calling attention to the trees, to their value, and to what they will mean to future generations.

THE STATE HAS NEEDED AN EFFORT like this for some time," says State Forester Robert Garrepy, director of DEP's Bureau of Forestry. The American Forestry Association has been coordinating a national listing of champion trees since 1940, but the responsibility for finding and measuring these trees belongs to state volunteers.

"During the 40s, 50s, and perhaps into the mid-60s, the coordinator ended up being in the state forestry organization because that was the only recognizable source of expertise," Garrepy said. Since then, however, heightened environmental awareness has led to

more volunteer involvement. Previous recording efforts include Katherine Matthies' *Trees of Note in Connecticut*, written in the 1930s, and Tree Warden Supervisor Alan B. Cook's list of 226 Connecticut big trees, compiled from 1931 to 1944. In 1968, J. Stanley Quickmire, at the National Audubon Society, compiled the most recent listing. Since then, the Bureau of Forestry has recorded all new tree sightings.

Prior to the formation of the notable trees committee, the program, according to Garrepy, "was not getting the attention it deserved. A decent program, like anything else you do well, requires time or money — preferably both." Since the committee was formed, however, the Bureau of Forestry has assisted in obtaining \$10,000 in federal funds for phone and travel costs.

LINKE SPEAKS FROM 45 YEARS of experience when he says that the great trees are hard to come by. Many have been routinely threatened or destroyed by road construction, development, pollution, and weather. In addition, the only location records available are often outdated and incomplete. More often than not, the trees no longer exist.

Linke has been helped by inquiry letters and records from the Forestry Bureau. Also, he knows where to look. Champion trees, he says, are often found near stone fences, roadsides, cemeteries, town halls, greens, and old homes — places where the trees had room to grow up. People know about them, but you have to find these people, talk to them, and do a great deal of driving, he said. "It's detective work," he added.

Searching for these trees is time-consuming, said Glenn Dreyer, chairman of the six-person committee



White oak on the property of North Windham Elementary School. Estimated to be 200 years old, it is the largest healthy white oak in the state. (Photos by the author.)

and assistant director of the Connecticut College Arboretum. According to Dreyer, the committee depends on a core of volunteers, and always cries to make new people aware of the search.

"Many of these trees are found when Bill Linke or someone like him drives down a road and says, 'Wow! What's that?' and it turns out to be the biggest tulip tree in New England," Dreyer said.

After the trees are discovered and measured, they are judged by a point formula based on height, circumference, and branch-spread. Those with the most points are placed on a regional list, *The New England Records of Champion Trees*, and — if they qualify — on the national list. The Norwich maple is the state's only national champion so far.

"Previously, the Connecticut lists were sparse," Dreyer said. "It was old information and rather out of date. Connecticut will be better represented now."

ALSO OF HISTORIC SIGNIFICANCE ARE the commemorative trees which mark special occasions, such as the Bicentennial or constitutional conventions. For some reason, says Linke, the older trees have had a much higher success rate than those planted recently. The pin oaks planted for the state's 1902

constitutional convention have fared far better than the oaks planted in 1965 or 1976, or even the crabapples planted to mark Connecticut's 350th anniversary. This is, in part, due to care.

"In 1986, 123 crabapple trees were planted. Twenty-five years from now there will probably be less than 50 of them left — the rest will be cut down," Linke said.

Many of the newer commemoratives have already been mowed down or pruned out. Some were planted too close to other plants, others were never watered, others were placed too near roads and buildings. Often, very few people know exactly where they are. Less than two percent are marked, and often a group of people will decide to take care of the tree without informing town officials. "If you go to a town hall and want to know where the bicentennial oak is planted, nobody knows," Linke said.

The problem involves both education and rapid turnover of government personnel. People need to be taught how to plant and raise their trees and town officials need to remember where they are.

The state has handed out care sheets and offered classes before the scheduled dates of commemorative tree plantings, but, according to Garrepy, "People don't like to be told how to plant trees."

But towns will need to plant more trees. Most of the state's roads and many of the highways will be expanded. Many great trees have already been lost to this process. A sizeable number of trees listed in Matthies' book were cut down because of their unfortunate positions along roadsides, and Garrepy expects that the situation will get worse. Development will continue.

THE REAL GOAL is to get people to notice the trees — to be more aware and more appreciative — and then, secondarily, to win a place on the national list.

"People seem to relate more readily to trees than to other plants," Dreyer said. "Plants form the basis of the food chain and produce oxygen that is fundamental to our survival, but somehow it is the great trees which capture our imagination."

The next time you are walking or driving down a country road, keep your eyes open for that special tree, one which seems to be older or bigger or have a bit more character than those around it. If you think you might have a champion — and there are still plenty out there waiting to be discovered — take a

Connecticut's Current Champs

The following trees have been cited by the Notable Trees Committee of the Connecticut Botanical Society. The measurements were taken from the largest of each species of the state's 10 most common trees.

Name	Circumference
Sugar Maple	269"
Red Maple	173"
Black Birch	No Champ.
European Beech	201"
White Ash	231"
Tulip-Tree	262"
White Oak	240"
Black Oak	126"
American Elm	115"
Norway Spruce	No Champ.

circumference measurement at 4.5 feet above ground level. Then contact Glenn Dreyer, Assistant Director, Connecticut Arboretum, Box 1625, Connecticut College, New London, CT 06320, or call 447-1911, ext. 7260. ■



The author unsuccessfully tries to encircle the 308-inch circumference of the Pinochet sycamore in Simsbury. At 93 feet, it is the largest recorded sycamore in New England.



Many Connecticut residents remember the flood of 1955. The town of Putnam was especially hard hit. (DEP file photos).

30 Years of Flood Protection

by
Steven Derby
 Principal Civil Engineer
 Water Resources Unit

OWNERS OF NEW HOUSES, construction waste piles, junk cars, and household rubbish probably don't think of themselves as contributing to flood dangers. But if the house or the wreck or the rubbish pile is in a flood plain, they may do just that.

The Stream Channel Encroachment Line program (SCEL) celebrated a 30th anniversary this month. On March 8, 1957, the first of the state's regulated stream channel areas was established. And, as serious as the floods of this year were, damage would have been even greater without the SCEL program.

Since 1957, over 100 stretches in approximately 70 towns have come under regulation, and today a total

of 270 miles of Connecticut's major flood-prone rivers are included in the program.

The program's main purpose is to assure that flood-plain development is compatible — both structurally and hydraulically — with expected flood flows. A second purpose is to preclude activities that increase flood hazards. The program requires that the DEP's Water Resources Unit issue permits for placement of fill, construction, storage or stockpiling of material, excavation, or grading conducted riverward of established stream channel encroachment lines. (Some agricultural activities don't require permits.)

Permits to develop in these areas are granted only if

it can be clearly demonstrated that no increase in flood hazard or other adverse consequences will result.

THE PROGRAM EMERGED after the flooding of 1955, which caused massive damage in many areas in the state. The actual lines are usually established to roughly outline the limits of the riverine floodplain.

Mapping of SCEL areas continued actively through the 1960s and 1970s, when funding was greatest for the program. The most recent mapping was completed in December, 1982.

In the earliest days of the program, which is administered by the DEP (as opposed to the local administration of the federal flood insurance program), the criteria were strictly hydraulics and potential impacts on others in the flood plain. Subsequent to the Inland Wetlands Act of 1972, the SCEL program was amended to include environmental values. Most recently, Federal Emergency Management Agency (FEMA) standards have been incorporated into the program.

Stream encroachment areas are inspected on a reg-

ular basis by the DEP, which also processes applications to conduct activities in these areas and pursues encroachment violations.

Currently, the DEP is planning to revise the encroachment lines along the Norwalk River and to establish lines along the Farm River in East Haven.

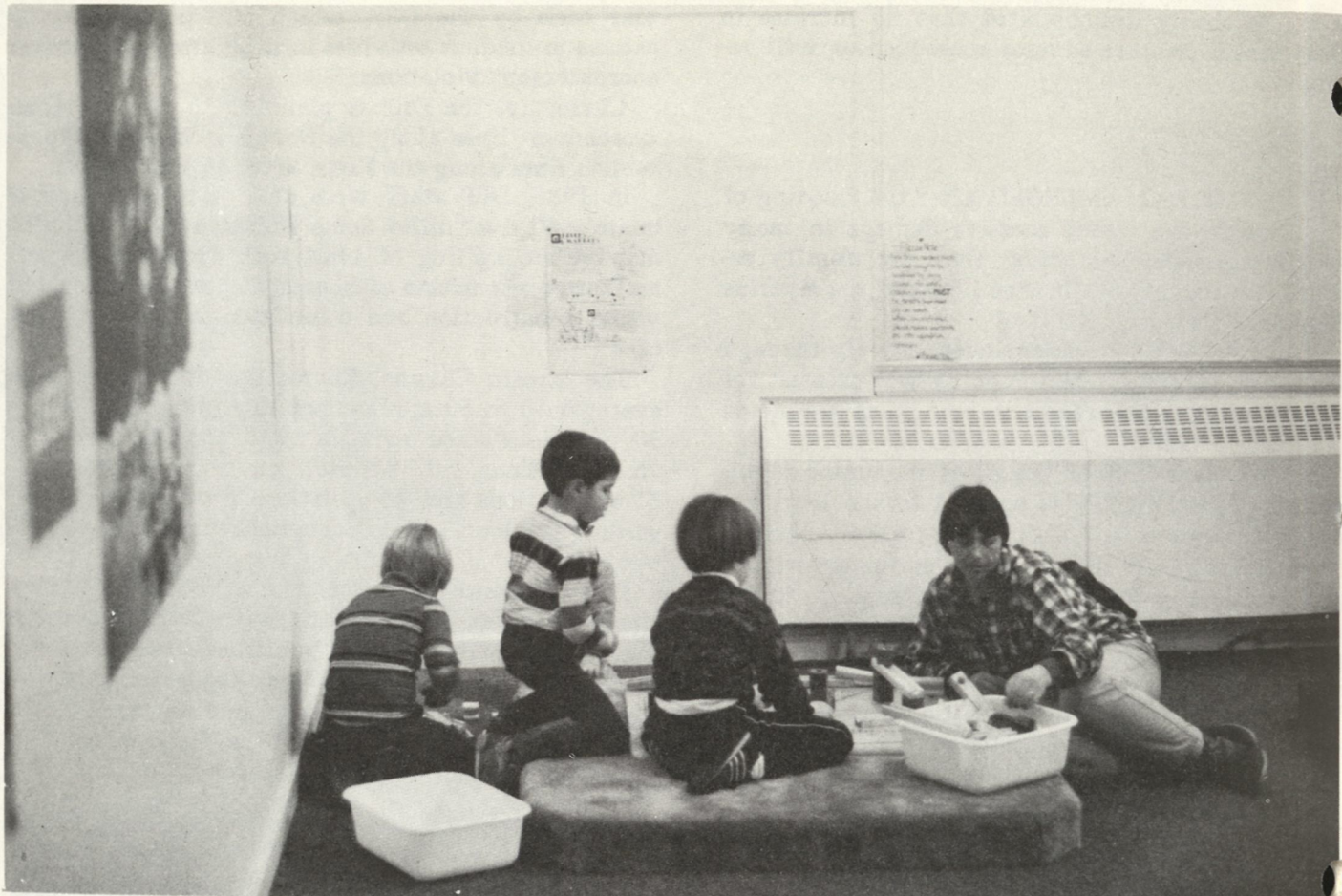
In 1986, DEP staff were able to inspect approximately 40 river miles. Some violations have included massive stockpiling of blast rock from mining operations, construction of houses, disposal of household waste, construction and demolition waste, and junk cars.

The Stream Channel Encroachment Line program averages 50 to 60 applications each year, with about 30 violations acted upon. In 1985, the DEP processed 76 applications and 48 violations; in 1986, there were 67 applications and 25 violations. Public hearings regarding particular projects are held when deemed necessary.

Encroachment line maps are on file with the town clerks of towns involved, and with DEP's Water Resources Unit. The unit also publishes a list of all regulated encroachment areas. Over the years, this program has reduced flood dangers and damages by allowing only those activities in a flood plain that clearly do not increase flood hazards. ■



Since 1957, 200 miles of the state's flood-prone areas have been included in this flood program. Pictured here, another street scene in Putnam, 1955.



Children enjoy the Lego Blocks and wooden blocks features at one of the Museum's continually changing exhibits.

A Visit to Lutz Children's Museum

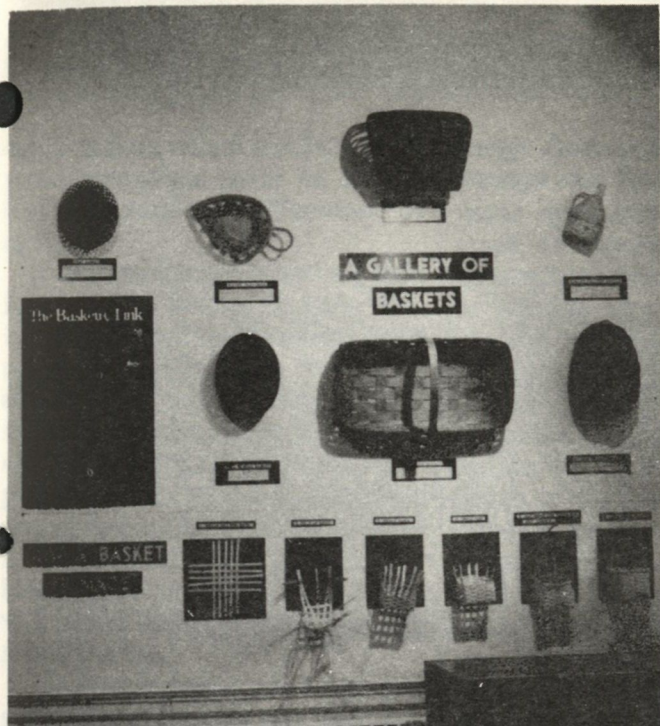
by
Alexander Thomas
Environmental Intern

TWENTY THOUSAND LEGO BLOCKS and wood blocks in one room sounds like a young child's dream, but it is typical of the changing, participatory exhibits featured at the Lutz Children's Museum in Manchester. With a unique style and approach, the Museum strives to offer children educational opportunities that they might not receive in the classroom. Of the three exhibit areas in the Museum, two change periodically. The other comprises 22 enclosures for a permanent live-animal exhibit.

IN 1953, the idea for a community youth museum grew out of the Manchester school system's desire

to provide supplemental enrichment opportunities in and out of the classroom. Until October of 1982, this Museum was located at 126 Cedar Street in a house originally constructed by the Cheney family in 1859 as a school for their children.

The Museum grew steadily, supported solely through membership dues, until the United Way accepted it as one of its agencies in 1962. Indeed, it was growth that forced the Museum to search for a new location with increased facilities. In the fall of 1982, the Museum moved into the former South School building on South Main Street in Manchester. "The move was certainly an improvement," says Steven Ling, director of the Museum. "It doubles the space of the Museum."



Through step-by-step instruction, this exhibit teaches children how to make a basket of their own.

UPON ITS FOUNDING, the Museum's purpose was "to establish, maintain, and provide a non-profit museum in the Town of Manchester for the enjoyment, education, and enlightenment of young people in all phases of the arts and sciences." With an emphasis on directed, participatory education, the Museum provides sources of enrichment children might not normally receive.

"In a word," says Ling, "the primary goal here is education." Ling says that the Museum offers unique educational opportunities, including the ability to "teach with real objects and artifacts." The Museum's emphasis on participatory education allows children to examine an exhibit and apply what they have learned at the site of the exhibit. These changing exhibits are devoted to topics in art, history, and science. Ling points to a recent exhibit in which children saw baskets dating as far back as 1804. Children were then taught how to make straw baskets of their own.

EACH ANIMAL ON DISPLAY in the Museum's live animal exhibit is there for rehabilitation. Once an animal has recovered from any injury or misfortune it might have encountered, says Ling, it is promptly returned to its native habitat. "We want to teach children that wild animals don't make good pets, that they belong in their natural surroundings," the director says. "If it can be rehabilitated, we do it."

While the wildlife exhibit does change, it features primarily native animals such as snakes, birds, raccoons, and owls.

THE EDUCATIONAL SERVICES DEPARTMENT of the Museum provides many educational resources to people working with children. Through three media — educational kits, resource lessons, and teaching tours — the Museum offers a variety of educational opportunities. With its staff of four full-time employees, four part-time employees, and over 60 active volunteers, the Museum offers a broad spectrum of opportunities to learn about the natural world.

In addition to the Museum, which is located on South Main Street in Manchester, children may visit the Nature Center, located on Oak Grove Street. This outdoor educational facility features trails through its 53 acres of varied habitat. The Nature Center has its own covered bridge, pond, stream, and hemlock grove.

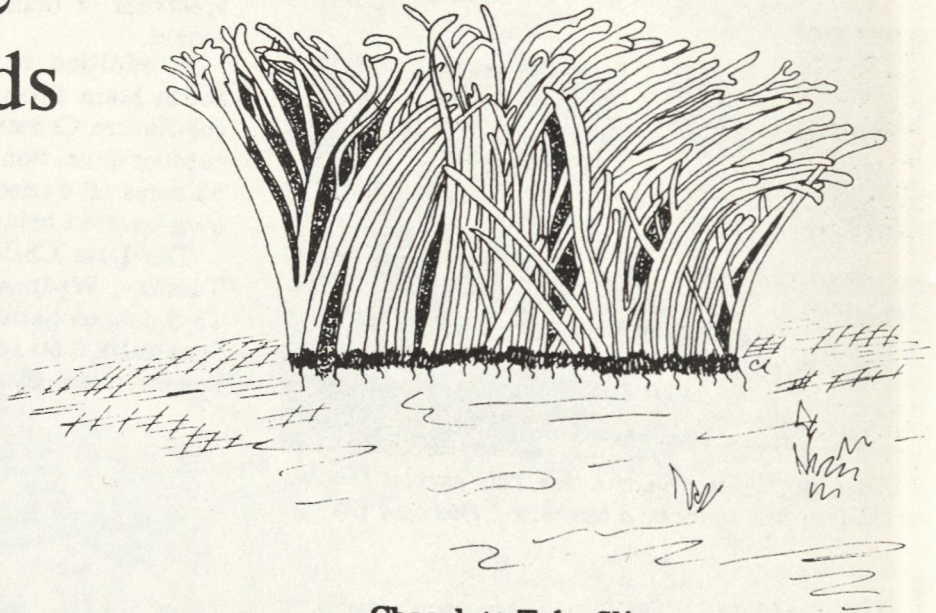
The Lutz Children's Museum is open 2-5 p.m. on Tuesday, Wednesday, Friday; 2-8 p.m. on Thursday; 12-5 p.m. on Saturday and Sunday. Admission is \$1.00 for adults, \$.50 for children, members free. On Thursday evenings there is no admission charge.



Visitors to the Lutz Children's Museum are greeted by this eight-foot stuffed Kodiak bear. (Photos by the author.)

The True Slime Molds

by
Gale W. Carter
Illustrations by
Caryn Alleva



Chocolate Tube Slime

FIND FEW ORGANISMS in the botanical world that are more exciting to discover than the true slime molds. Relatively few people are familiar with them. Coming across these minute organisms is like making a visit to fairyland. Most of the fruiting bodies are only a fraction of an inch in height and width. Many are extremely beautiful.

Man has known about slime molds for hundreds of years, but there has always been controversy on how to classify them. The problem arises because at one stage of their life they are animal-like, capable of moving, and at another stage they are stationary, taking on plant-like characteristics. At present, although this is not complete-

ly agreed on, they are most often placed with the fungi. This is the way that they will be considered in this article.

Slime molds are found in any wooded area where it is moist. In this habitat they will appear on old logs, among the leaf litter, on the trunks of trees, as well as on soil. In other environments, they grow on straw, compost piles, wood chips, and manure heaps. They sometimes appear on grass on one's lawn.

There are nearly 500 species of slime molds in North America, but only a fraction of this number would be found in any one locality. They reproduce by spores and many species are found worldwide.

The best time to look for slime molds is the few days following a period of steady or heavy rain. Most of the true slime molds follow a

similar pattern in their life cycle. This consists of a creeping mass of protoplasm — the plasmodium — the original blob, followed by a spore-producing stage. The presence of a plasmodium is a major difference between slime molds and other fungi. The plasmodium usually consists of a rear section that is netted and an advancing region that is sheet-like and fan-shaped. It can move and feed in an amoeba-like fashion. A typical fruiting body, which appears at the spore-producing stage, has a base (hypothallus) made of a variety of materials depending on the species, a stalk, and a spore case (sporangium), but there are many variations.

Many slime molds can be identified with the naked eye or hand lens, but in order to discover the

details in some slime molds, a compound microscope will be needed (e.g., to determine differences in spores).

If slime molds are collected, look for those with mature fruiting bodies. They should be handled with care because the parts are fragile. As soon as they are collected, they should be stored in either small boxes or a box with many small compartments. Each specimen should be secured by a drop of glue as soon as it has been collected. If properly handled and stored, slime molds will retain their features indefinitely.

The Myxomycetes are only one group of slime molds but they are referred to as "true" slime molds because they are the most numerous and the best known group. Let's now consider a few of the different kinds of true slime molds to see how they may vary.

SCRAMBLED EGG SLIME (*Fuligo septica*) is one of the best known and most collected slime molds. It is found in a wide variety of habitats. These may

range from common sites like old stumps and leaf litter to more unusual spots such as desert sand or a crack in concrete pavement. This species was even found growing on a whale's skull that was being bleached in the British Museum of Natural History.

The plasmodium stage of the scrambled egg slime is usually a yellowish to white blob, which gives it its common name. As it changes into the spore-producing body, the plasmodium contracts into a mass of threads that are somewhat mound-shaped. The strands on the inside become the black spore-producing portion, while the outer layer of threads becomes crusty or spongy. The strands are mixed with lime. This form taken by the fruiting body is called an aethalium. It may vary in color from yellow to white or, rarely, red or even brown. The season for the scrambled egg slime is from May to October.

WOLF'S MILK or toothpaste slime (*Lycogola epidem-*

drum) was the first of the slime molds ever to be described. It has been known for more than 300 years.

Its fruiting bodies resemble tiny puffballs which, when immature, exude a pinkish paste — hence the name "toothpaste slime." This paste becomes yellow and powdery as the spores reach maturity.

Each fruiting body is only a fraction of an inch in height and width and varies, depending on age, from pink to various shades of brown. It is usually found on old rotting logs. The fruiting bodies may be scattered or closely grouped. The plasmodium stage is a reddish color.

It is a very common species, found between June and November.

RED RASPBERRY SLIME (*Tubifera ferruginosa*) is so-named because at a certain stage in its development it consists of a group of compressed sporangia that are red in color and resemble the raspberry in form.

It is one of the more spectacular species of slime molds because of its color.

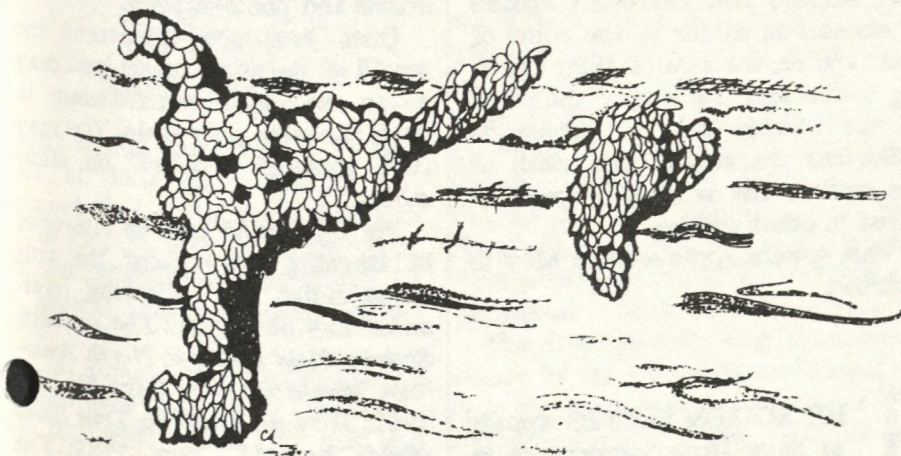
It may take the form of an extensive growth over the bark of a tree, spreading a foot or more. It is also found on leaves and decaying vegetation.

Red raspberry slime starts out as a transparent plasmodium that changes color from white to red. At this stage it forms the reddish sporangia. They are crowded densely together, giving the appearance of being connected. This arrangement is called a pseudoaethalium. The sporangia will then turn purplish and eventually brown, resembling a bunch of cigars.

The season for this slime mold is from June to November.

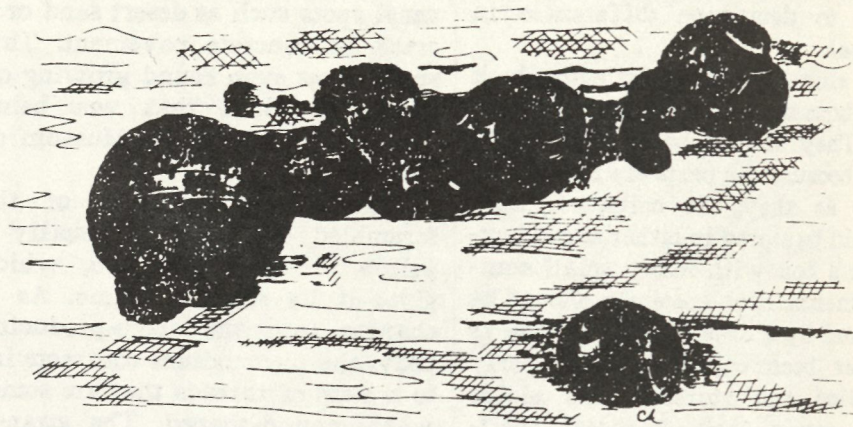
BEAUTIFUL CORAL SLIME (*Ceratomyxa fruticulosa*) mold starts out its life as a trans-

Carnival Candy Slime



lucent mass in the plasmodium stage. It later turns white to yellowish and is usually found on the top side of old logs, sometimes spread over an area of three to five feet. Other sites may be on dead leaves or litter. It is one of the most widely distributed slime molds in North America.

Unlike other slime molds, its spores appear externally, attached to its greatly expanded base (hypothallus) on tiny hair-like stalks. When viewed with a hand lens, the mass resembles coral or the coconut frosting on a cake. The fruiting bodies may appear singly or may be branched. Coral slime is found between June and October.



Wolf's Milk Slime

CARNIVAL CANDY SLIME (*Arcyria denudata*) can be recognized by its reddish cylindrical sporangia (spore cases) that arise from a sheet-like base. These fruiting bodies are usually found in dense clusters on rotting deciduous wood.

Each sporangium is supported by a dark or reddish stalk. The color of the sporangia is bright to dull red, eventually changing to brown or green as they become weathered. The wall of the sporangium that encloses the mass of reddish spores is more or less divided into a basal cup which persists and an upper part which withers and drops off early. Each sporangium contains reddish sterile threads (the capillitium) which are meshed with the spores. They aid in spore dispersal. Its plasmodium stage appears as a shiny whitish mass.

This species is widely distributed in North America and is one of the most abundant slime molds. It has a season which extends from June to November.

splendens) is a very common species which is also called "hot dogs on a stick." It is one of the easier slime molds to recognize. The plasmodium stage in this species is rather distinctive, consisting of a white jelly-like mass. It is usually found on dead wood and leaves. This stage eventually changes to form a cluster of long cylindrical sporangia that often lean or droop. They are supported on thin shiny stalks.

Stemonitis has a capillitium which branches to form an irregular surface net. Different species of *stemonitis* differ in the color of their spores, the size of their fruiting bodies and the size of the mesh of the outside net. In *Stemonitis splendens* the size of the mesh of the surface net is very large compared to other species.

This species appears from May to October.

bacteria and fungus spores (during the plasmodium stage), their role in the recycling of material is negligible.

The structure and function of slime molds have long intrigued scientists. They have been used widely for physiological and biochemical studies and for cancer research.

For the nature lover, the greatest value of slime molds is probably their aesthetic appeal. This makes them favorite objects of study for artists and photographers.

Once you have discovered the world of the slime molds, you may never see your environment in quite the same way again. You may find yourself "hooked" on slime molds.

For those who may be interested in learning more about the true slime molds, the following references may be helpful: *The Audubon Society Field Guide to North American Mushrooms* by Gary Lincoff, 1981; *How to Know the True Slime Molds* by M.L. Farr, 1981; *The Myxomycetes* by Martin and Alexopoulos, 1969 (Technical).

STEMONITIS or Chocolate Tube Slime (*Stemonitis*)

THE MYXOMYCETES appear to have little importance in the economy of nature. Because they feed largely on such things as

The Bulletin Board

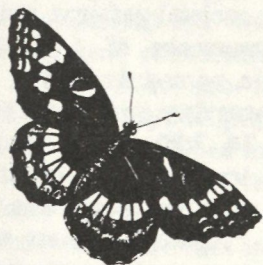
Ozone Information

John Anderson, Acting Commissioner of the DEP, announced that as of April 1, 1987, the DEP's pollutant standard index (PSI) will again include ozone levels.

"The level of ozone (automotive smog) in Connecticut rises during the warmer months," Anderson said, "because strong sunlight acting on automobile emissions promotes the reaction of nitrogen dioxide and hydrocarbons to form ozone. The PSI will provide state residents with information on ozone levels. This is especially important to those who suffer from respiratory ailments."

Information on daily air pollution levels is available from DEP representatives at the Governor's Information Bureau. The toll-free number is 1-800-842-2220.

Information on health effects can be obtained from the American Lung Association at 1-800-992-2263. The Lung Association also offers the public a free pamphlet that explains the index.



Violator Sentenced

Robert Buyak, director of DEP's Bureau of Law Enforcement, announced that Anthony J. Romano Sr., of Enfield, was found guilty in Enfield Superior Court on March 30 of several wildlife-related violations.

"Mr. Romano was arrested after extensive undercover investigation conducted by the DEP and the U.S. Fish and Wildlife Service," said Buyak. "The joint investigation

was successful in gathering overwhelming evidence of Romano's illegally buying and selling wildlife at his place of business, Tony Romano and Sons Meat Company, Broad Brook Road, Enfield."

Romano was found guilty of six counts of illegal possession, offering for sale, and illegal sale of deer, and six counts of possession of wild birds (hawks, owls, songbirds, etc.) with intent to sell or exchange. He was fined a total of \$4,200.00, received a one-year suspended jail sentence, two years probation, and lost his hunting and fishing licenses for one year.



Park Passes

Dennis DeCarli, Deputy Commissioner of the DEP, announced that *Recreation Season Passes* to state parks and recreation areas are available and reminded holders of 1986 *Charter Oak Passes* that these continue to be valid through 1987.

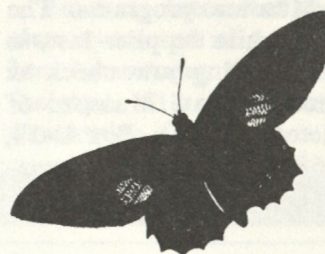
The *Recreation Season Pass* is available to persons under 60 for \$20. It comes in the form of a windshield sticker and is valid for the 1987 season for vehicular admissions or parking at Connecticut state parks and forest recreation areas where there is a parking fee. The pass is also valid at state boat launching facilities.

Recreation Season Passes are available at the DEP's Licensing Office, Room 126, State Office Building, 165 Capitol Avenue, Hartford, CT 06106, and at major state parks. Make checks payable to "Treasurer - State of Connecticut."

The free *Charter Oak Pass* continues to be available to Connecticut residents over 60. *Charter Oak Passes* issued in 1986, and dated 1986, will continue to be accepted through 1987, and newly issued

Charter Oak Passes will continue to show the 1986 date. No renewal is necessary by current holders.

The *Charter Oak Pass* comes as a wallet card. To obtain your *Charter Oak Pass*, request an application form from: DEP *Charter Oak Pass*, State Parks and Recreation, 165 Capitol Avenue, Hartford, CT 06106. Like the *Recreation Season Pass*, the *Charter Oak Pass* is good for parking at state park and recreation and boat launching areas. In addition, it is good for free admission to Gillette Castle and Dinosaur State Park, and fishing at the Quinebaug Valley Hatchery ponds.



Museum Events

The Connecticut State Museum of Natural History announces the following special activities:

May 3, Sunday: "Snakes of Connecticut," hands-on demonstration and slide talk for children and families by Linda Krulikowski, MNH speaker, naturalist, and photographer, 1 p.m., Northwest Park, Windsor.

May 7, 9, 14, 21, 23, Thursdays and Sundays: Birding Workshops and Field Schools, Registration fee: \$55 for Museum members, \$65 for non-members. Week 1 - warblers and vireos; Week 2 - medium-sized land birds (flycatchers, thrushes); Week 3 - shorebirds, gulls, terns. Call the Museum for information.

In addition, The Connecticut State Museum of Natural History

has a special, limited-time offering for new members. With each new membership of \$25 or more, the Museum will include — free — *Connecticut's Venomous Snakes*, by Richard C. Petersen and Robert W. Fritsh II. This new 48-page booklet, published by the DEP, shows venomous snakes and their look-alikes in color and black and white photographs. Current members may receive the booklet, a \$7.00 value, by increasing their membership category or by donating an additional \$25 to the Museum. Other benefits of membership include the quarterly *Explorer Magazine*, free admission to 40 science museums, and discounts on Museum programs. The offer is good while supplies last, so join today by sending your check to: The Connecticut State Museum of Natural History, UConn, Box U-23, Storrs 06268. For further information, phone (203) 486-4460.



Fishing on the Housatonic

Today's Isaak Waltons grow rhapsodic when describing the pleasures and challenges to be found along Connecticut's Housatonic River. Sweeping into the northwest corner of the state, the Housatonic curves and twists through the wooded Litchfield Hills, across the gently rolling coastal plain until it empties into the broad expanse of the Long Island Sound. Along its route, fishermen discover enough superb angling sites to last them through many a long evening of piscatorial tale-spinning.

A favorite area among dedicated moving-water fishermen is the Salisbury - Canaan - Sharon - Cornwall

portion of the River that stretches from Route 112 to the covered bridge at Routes 4 and 7. There is no closed season for trout here, except for portions within 100 feet of the mouths of tributary streams which are closed to all fishing from July 1 through August 31. (The areas are indicated by posters.) Fishing in the Francis L. Sheane Memorial Area of Housatonic Meadows State Park is restricted to fly-fishing and the daily creel limit for trout is zero. All trout caught here must be returned immediately, and without avoidable injury, to the waters in which they were taken. Here, it is the sport alone that draws fishermen to the area, not the prospect of a sizzling, pan-fried dinner.

Other favorite areas along the Housatonic are Lake Lillinonah and Lake Zoar which were formed when the River was dammed back in the 1920s. Today, these man-made bodies of water are famed for their bass fishing, along with their catches of yellow and white perch, sunfish, and catfish. Both lakes offer public boat launching areas.

A Connecticut fishing license is required of all fisher-persons age 16 or older. Licenses are easily obtained by contacting any Connecticut town clerk or agent. Fees for Connecticut residents are \$9.00 for the season, free for those 65 and older. For non-residents, a season license is \$17.00, a three-day license, \$8.00.

The DEP publishes an annual *Connecticut Angler's Guide* which lists fishing sites throughout the state, regulations, and general information, such as legal limits, closed seasons, fish identification, and record catches. For a copy of the *Guide*, contact the DEP, Information and Education Unit, Rm. 112, 165 Capitol Avenue, Hartford, CT 06106.



AIAI Events

The following events are scheduled at the American Indian Archaeological Institute in Washington:

Saturday, May 9, 10 a.m. Spring Survival Walk by Dr. Edmund K. Swigart. This short course in survival techniques will include a walk through woodland environments. Registration is limited and is \$3/person (\$2 for AIAI members). Please call (203) 868-0518 to register.

Saturday and Sunday, May 9 and 10, 2:30 p.m. The film *Excavations at La Venta* documents the excavations of the Olmec site La Venta, Tabasco, Mexico.

Saturday and Sunday, May 16 and 17, 2:30 p.m. The film *Mystery of the Anasazi* describes the origins, societal patterns, and eventual disappearance of a little known people, named Anasazi.

Saturday and Sunday, May 23 and 24, 2:30 p.m. In the film *Broken Arrow*, James Stewart plays a U.S. cavalry scout who discovers that "Apache mothers cry about their sons, and Apache men have a sense of fair play."

Saturday, May 23, 1987, 10 a.m. to 3 p.m. A beginners' flintknapping workshop. Registration is \$24 (\$18/members). A materials fee: \$5. To register, phone (203) 868-0518.

AIAI is located on Route 199, Post Office Box 260, Washington, CT 06793. Admission is by membership or donation of \$2/adults, \$1/children, age 6-18. For further information, phone (203) 868-0518.



Toward the Classroom

by

Marshal Case

Vice President, Education
National Audubon Society

Connecticut is home to National Audubon Society's national education headquarters and to the new and vibrant *Audubon Adventures* youth program.

The National Audubon Society has enjoyed a long tradition as a national leader in conservation and environmental education. Several million children learned about the natural world through their participation in the former Junior Audubon Clubs during the course of several earlier decades. The Society now presents an updated and timely education program for young people, which is available through the efforts of the more than 500

Audubon chapters throughout the United States.

Audubon Adventures, the youth education program of the National Audubon Society, is for elementary school classes and other groups of children in grades three through six. Developed and written by professional educators with a special interest in environmental education, *Audubon Adventures* is issued on a bimonthly basis and the subscription period coincides with the school year.

Audubon Adventures covers a wide range of topics, with a mix of conceptually-oriented as well as more specific reading matter. The timely, relevant feature stories and activities are suitable for both short range and long term, in-depth, and cross-curricular studies. Some of the subjects that have been covered include: hawks, owls, animal tracks,

wetlands, ducks, animals that use cavities, the nesting season, constellations, the bald eagle, the wild turkey, fruits, nature's harvest, mollusks, and tropical rainforests.

Today *Audubon Adventures* is in use in over 5400 classrooms across the United States, with an enrollment of 160,000 children. In Connecticut, 170 classrooms with 5100 students participate. General Electric Foundation has recently awarded a \$25,000 grant to help establish additional classrooms in Connecticut, New York, Massachusetts, and Vermont. Included with the grant is a provision for 11 scholarships to Audubon Ecology Camps for teachers.

Teachers interested in having a class sponsored may contact: *Audubon Adventures*, National Audubon Society, 613 Riversville Road, Greenwich, CT 06831. ■

The Night Sky

by

Francine Jackson

How time flies. The last time a supernova was bright enough to be seen with the unaided eye was in 1604, when it was chronicled by Johannes Kepler. That one must have been exceedingly bright, because Kepler, though a great mathematician and theoretician, is believed to have been blind as a bat.

A supernova is a star that is dying. When stars several times larger than the sun use up their lighter elements (such as hydrogen and helium) inside their centers, the outer layers become so unstable they explode, sometimes becoming hundreds of thousands of times brighter than ordinary stars. Occasionally, a

supernova can be so bright that it can shine brighter than the galaxy it belongs to. The newly-discovered supernova, designated SN1987A, peaked at about fourth magnitude, about six times brighter than the naked-eye limit, or about the brightness of the dimmer stars in the Little Dipper.

Because there are so many stars in a galaxy (about 10 to the 11th power), it is believed at least one star should be seen as a supernova each century in each known galaxy, including our Milky Way. The fact that one hadn't been recorded in our neighborhood since Kepler's time made this supernova doubly interesting. Because it was so bright, at first scientists believed it was the long-awaited "home" supernova. Unfortunately, though, this turned out not to be true. However, an amazing thing happened — although it was too far away to be contained in the Milky Way, it also was too close to be part of the galaxy in which line-of-sight direction it appeared to be. This star hadn't ex-

ploded in the galaxy called the Large Magellanic Cloud, but in a previously unknown galaxy between us and them. So, even though we still have to wait to discover a supernova in our own Milky Way, even though we "lost" a supernova, we "gained a brand-new galaxy."

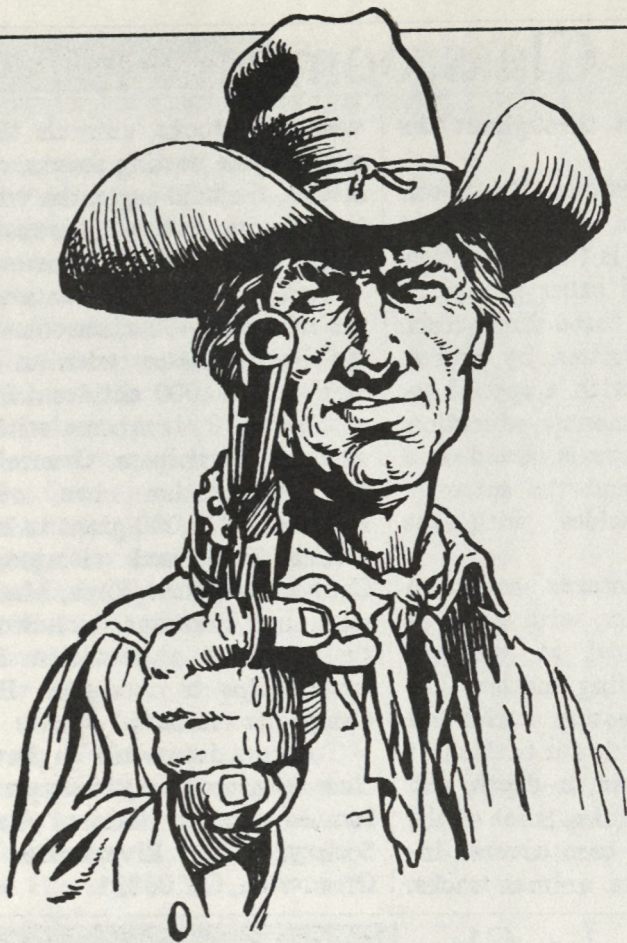
Anyone wishing to see this supernova will have to take a fairly long drive — to Brazil. To see it, you will have to be south of the 10-degree north latitude line. ■

Endnote

"It was some time after the moon rose that I began to realize that I was being followed."

Loren Eiseley





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